
Stem Cell Agency Board Approves Three More Projects Targeting COVID-19

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Oakland, CA – The COVID-19 virus targets many different parts of the body, often with deadly or life-threatening consequences. That's why the governing Board of the California Institute for Regenerative Medicine (CIRM) today approved investments in three early-stage research programs taking different approaches to battling the virus.

Dr. Jianhua Yu at the Beckman Research Institute of City of Hope was awarded \$150,000 to use stem cells from umbilical cord blood to attack the virus. Dr. Yu and his team have many years of experience in taking cord blood cells and turning them into what are called chimeric antigen receptor (CAR) natural killer (NK) cells. The goal is to deploy these CAR NK cells to specifically target cells infected with COVID-19. This leverages the body of work at the City of Hope to develop this technology for cancer.

Dr. Helen Blau of Stanford University was awarded \$149,996 to target recovery of muscle stem cells of the diaphragm in COVID-19 patients who have an extended period on a ventilator.

Patients with severe coronavirus often suffer respiratory failure and end up on mechanical ventilation that takes over the work of breathing. Over time, the diaphragm, the main muscle responsible for inhaling and exhaling, weakens and atrophies. There is no treatment for this kind of localized muscle wasting and it is anticipated that some of these patients will take months, if not years, to fully recover. Dr. Blau's team proposes to develop a therapy with Prostaglandin E2 and Bupivacaine based on data generated by Dr. Blau's group that these drugs, already approved by the FDA for other indications, have the potential to stimulate muscle stem cell recovery.

Dr. Albert Wong, also from Stanford University, was awarded \$149,999 to develop vaccine candidates against COVID-19.

Most vaccine candidates are focused on getting the body to produce an antibody response to block the virus. However, Dr. Wong thinks that to be truly effective, a vaccine also needs to produce a CD8+ T cell response to augment an effective immune response to remove the COVID-19 infected cells that are hijacked by the virus to spread and cause illness. This team will use the experience it gained using CIRM funds to vaccine against glioblastoma, a deadly brain cancer, to advance a similar approach to produce an effective cellular immune response to combat COVID-19.

"CIRM is committed to supporting novel, multi-pronged approaches to battle this COVID-19 crisis that leverage solid science and knowledge gained in other areas," says Dr. Maria T. Millan, the President & CEO of CIRM. "These three projects highlight three very different approaches to combatting the acute devastating health manifestations of COVID-19 as well as the debilitating sequelae that impact the ability to recover from the acute illness. Through this COVID funding opportunity, CIRM is enabling researchers to re-direct work they have already done, often with CIRM support, to quickly develop new approaches to COVID-19."

About CIRM

At CIRM, we never forget that we were created by the people of California to accelerate stem cell treatments to patients with unmet medical needs, and act with a sense of urgency to succeed in that mission.

To meet this challenge, our team of highly trained and experienced professionals actively partners with both academia and industry in a hands-on, entrepreneurial environment to fast track the development of today's most promising stem cell technologies.

With \$3 billion in funding and approximately 300 active stem cell programs in our portfolio, CIRM is the world's largest institution dedicated to helping people by bringing the future of cellular medicine closer to reality.

For more information go to www.cirm.ca.gov